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Reduced-Reference video quality metric using spatial information in Salient Regions (Article)

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Abstract

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In multimedia transmission, it is important to rely on an objective quality metric which accurately represents the subjective quality of processed images and video sequences. Maintaining acceptable Quality of Experience in video transmission requires the ability to measure the quality of the video seen at the receiver end. Reduced-reference metrics make use of side-information that is transmitted to the receiver for estimating the quality of the received sequence with low complexity. This attribute enables real-time assessment and visual degradation detection caused by transmission and compression errors. A novel reduced-reference video quality known as the Spatial Information in Salient Regions Reduced Reference Metric is proposed. The approach proposed makes use of spatial activity to estimate the received sequence distortion after concealment. The statistical elements analysed in this work are based on extracted edges and their luminance distributions. Results highlight that the proposed edge dissimilarity measure has a good correlation with DMOS scores from the LIVE Video Database. © 2018 Universitas Ahmad Dahlan.

Author keywords

Objective video quality metric | Quality of service | Reduced-reference metric | Video quality | Video signal processing

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